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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,952	03/26/2004	Michael David Pleskach	7162-0119	9829
39207	7590	08/01/2005	EXAMINER	
SACCO & ASSOCIATES, PA			MAI, ANH T	
P.O. BOX 30999			ART UNIT	
PALM BEACH GARDENS, FL 33420-0999			PAPER NUMBER	
			2832	

DATE MAILED: 08/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/810,952

Applicant(s)

PLESKACH ET AL. 

Examiner

Anh T. Mai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-12, 14-21 and 23-25 is/are rejected.
- 7) ☒ Claim(s) 5, 13, 22 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5pgs.</u> | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 8, 10, 17, 18-19, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harding [6820321] in view of Aoyagi [2004/0124961] and in view of Murata [JP2001267129A].

Harding discloses a substrate 50, toroidal core embedded in the substrate [figs 3A,B]; at least one conductive coil 58 with plurality of turns about the toroidal core and vias 56, 68, wherein the core is integrally formed with the substrate [figures 3A]. Harding discloses the invention as claimed as cited above except for the material of the substrate being ceramic. Aoyagi discloses the material of the substrate being made of low temperature co-fired ceramic substrate [para 0024]. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use LTCC substrate as taught by Aoyagi to Harding. The motivation would have been to increase the Q-value [para 0012]. Therefore, it would have been obvious to combine Aoyagi with Harding.

However, Aoyagi does not use ceramic material for the core in the substrate. JP'129A discloses the ceramic core 22 of high permeability on the center portion of ceramic substrate of the choke coil [abstract; figures 1-2]. At the time of the invention, it would have been obvious to

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a person of ordinary skill in the art to use ceramic core as taught by JP'129A in view of Harding and Aoyagi. The motivation would have been to control the inductance value due to magnetic characteristics of the ceramic core. Therefore, it would have been obvious to combine JP'129A with Harding and Aoyagi.

With respect to claim 2, Aoyagi having plurality of turns are contained within the substrate at all points [fig 4].

With respect to claim 8, autotransformer is an intended use function of the claimed transformer.

With respect to claims 10, 18-19 the claims are method counterpart of structure claim 1.

With respect to claim 17, the claim is method counterpart of structure claim 8.

With respect to claim 23, the claim is method counterpart of structure claim 1.

3. **Claims 4, 12, 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Harding, Aoyagi Murata as applied to claim 1 above, and further in view of Bahl [5805043].

Harding, Aoyagi and Murata disclose the invention as claimed as cited above except for a ground plane disposed within the substrate. Bahl discloses metallized material ground plane 14 disposed on surface of substrate 12 [fig 1; column 2, lines 44-50]. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a ground plane as taught by Bahl to Harding, Aoyagi and Murata. The motivation would have been to provide ground connection or for shielding. Therefore, it would have been obvious to combine Bahl with Aoyagi, Harding and Murata.

With respect to claim 12, the claim is method counterpart of structure claim 4.

With respect to claim 21, the claim is method counterpart of structure claim 4.

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4. **Claims 6-7, 14-16, 24-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Harding, Aoyagi Murata as applied to claim 1 above, and further in view of Krone [6148500].

Harding, Aoyagi and Murata disclose the invention as claimed as cited above except for the second winding on the toroid core. Krone discloses the windings 42, 50 having different radius [figure 25] on toroid core 30 to form a choke/transformer [col 5; lines 24-30]. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have second winding with different radius as taught by Krone to Harding , Aoyagi and Murata. The motivation would have been to provide part of the filter module. Therefore, it would have been obvious to combine Krone with Aoyagi , Harding and Murata.

With respect to claims 14-16, the claims are method counterparts of structure claims 6-7.

With respect to claim 24-25, the claims are method counterparts of structure claims 6-7.

5. **Claims 3, 9, 11, 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Harding, Aoyagi Murata as applied to claim 1 above, and further in view of Killen et al. [6791496]. Harding, Aoyagi and Murata disclose the invention as claimed as cited above except for ceramic toroid core having permeability greater than 1. Killen discloses the ceramic substrate which has magnetic permeability of at least about 1.1 [column 8; lines 2-8]. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have substrate having permeability of greater than 1 as taught by Killen to Harding , Aoyagi and Murata. The motivation would have been to increase the magnetic properties of the substrate. Therefore, it would have been obvious to combine Killen with Aoyagi , Harding and Murata.

With respect to claims 11, 20 the claims are method counterpart of structure claim 9.

Allowable Subject Matter

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6. Claims 5, 13, 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The claims recite inter alia, *ground plan is interposed between the conductive coil and one surface mount component disposed on surface of the substrate.*


The references of record do not teach or suggest the aforementioned limitation, nor would it be obvious to modify those references to include such limitation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh T. Mai whose telephone number is 571-272-1995. The examiner can normally be reached on 5/4/9 Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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ANH MAI
PRIMARY EXAMINER